

CLAIMS

1. An injection device comprising a container (80) for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a barrel (50, 48, 46, 36) in which said container (80) is displaceable between a proximal end position and a distal end position,

comprising a plunger (108), arranged in the barrel and serving to expel injection fluid (53) out of the cartridge (52), which plunger during an injection is guided in a guide member (124) axially displaceably but nonrotatably relative to the barrel, and which has an external thread (159) that is guided in an internal thread (152) of a setting member (151) serving to set the injection dose,

and comprising a frictionally engaging coupling (162, 250) - in the manner of a slip coupling - between the container (80) and the plunger (108), for transferring at least a portion of an axial movement of the plunger (108) to the container (80).

2. The injection device according to claim 1, in which the setting member (151) has associated with it a spring (172) for biasing the setting member (151) in the proximal direction,

and the setting member (151) can be displaced against the force of said spring (172) into a distal position (FIG. 3) and releasably latched there.

3. The injection device according to claim 2, wherein the setting member (151) can be displaced from the proximal end of the barrel into a distal position (FIG. 3) and releasably latched there.

4. The injection device according to claim 3, wherein for cocking the spring (172), a cocking member (56) is provided which can be joined, from the proximal end of the injection device (30), to a thread (60) of the injection device, in order to displace the container (80), using a distal end region of the cocking member (56), in the proximal direction.

5. The injection device according to one or more of the foregoing claims, wherein the setting member (151) is, in at least one distal position (FIG. 2), rotatable relative to the barrel of the injection device in order to make possible an axial displacement of the plunger (108) relative to the barrel for the purpose of setting an injection dose (Y).

6. An injection device comprising a container (80) for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a barrel (50, 48, 46, 36) in which said container (80) is displaceable between a proximal end position and a distal end position,

comprising a plunger (108), arranged in the barrel and serving to expel injection fluid out of the cartridge (52), which is guided in a guide member (124) axially displaceably but nonrotatably relative to the guide member,

and which has an external thread (159) that is guided in an internal thread (152) of a setting member (151),

comprising a cocking spring (172) biasing the setting member (151) in the proximal direction and, during an injection operation, causes displacement thereof into a proximal end position,

and against the force of which the setting member (151) can be displaced into a distal end position and releasably latched there,

comprising a first coupling arrangement (K4), for nonrotatable but axially displaceable coupling of the setting member (151) to the barrel, which is deactivated in the distal end position of the setting member (151),

and comprising a second coupling arrangement (K5), for nonrotatable but axially displaceable coupling of the guide member (124) to the barrel, which is activated in the entire region between the distal and proximal end positions of the guide member (124).

7. The injection device according to claim 6, comprising a connection (282), provided between guide member (124) and setting member (151), that joins said parts to one another rotatably but substantially axially nondisplaceably.

8. The injection device according to claim 6 or 7, wherein both the guide member (124) and the setting member (151) have external splines (274 and 222, respectively),

and said external spline sets have associated therewith internal splines (134) in the barrel (36), into which said external spline sets (222, 274) can engage, individually or together, by means of a longitudinal displacement of guide member (124) and setting member (151) occurring relative to the barrel (36).

9. The injection device according to claim 8, wherein the setting member (151) is equipped with a latching member (64), by means of which the setting member (151) can be releasably latched in a predefined axial position relative to the barrel (36) in which its external splines (222) are not in engagement with the internal splines (134) in the barrel (36).

10. The injection device according to claim 8 or 9, wherein the setting member is equipped with a latching member (64), by means of which the guide member (124) can be releasably latched in a predefined axial position relative to the barrel (36) in which its external splines (274) are in engagement with the internal splines (134) in the barrel (36).

11. The injection device according to claim 9 or 10, wherein the setting member (151) is rotatable relative to the latching member (64) provided on it.

12. The injection device according to one or more of claims 6 through 11, wherein the setting member (151) is biased by the cocking spring (172) in the proximal direction with interposition of an annular part (176).

13. The injection device according to one or more of the foregoing claims, wherein there is provided, between the container (80) for the cartridge (52) and the guide member (124), a drive connection which makes possible the transfer of a torque from said container (80) to the guide member (124).

14. The injection device according to claim 13, wherein the drive connection comprises at least one apparatus (118, 242; 232, 234) that limits, in at least one rotation direction, the torque transferable from the container (80) to the guide member (124).

15. The injection device according to claim 14, wherein the apparatus for limiting the torque is configured as a slip coupling (232, 234).

16. The injection device according to claim 15, wherein the slip coupling (232, 234) is effective for the rotation direction (FIG. 32: 321) in which a disengageable connection (115, 118) closing the container (80) is closed.

17. The injection device according to one or more of the foregoing claims, wherein a lock (111, 112) for locking rotation of the container (80), which is disengaged upon replacement of a cartridge (52), is provided.

18. The injection device according to claim 17, wherein the outer side of the container (80) is axially guided (FIG. 5: 112) in the inner side of a barrel part (48), and this axial guidance (111, 112) is deactivated when the barrel is opened in order to replace a cartridge (52).

19. The injection device according to one or more of the foregoing claims, wherein the container (80) can be closed and opened by means of a disengageable connection (115, 118), in particular a threaded or bayonet connection, so that a cartridge (52) can be introduced or removed.

20. The injection device according to claim 19, wherein the disengageable connection (115, 118) comprises a device (118, 242) for generating an elevated breakaway torque in order temporarily to necessitate an elevated torque upon its disengagement.

21. The injection device according to claim 19 or 20, wherein the disengageable connection (115, 118) comprises an element (116) that is connected via a drive connection (266, 268, 270, 272) to the guide member (124).

22. The injection device according to claim 21, wherein the drive connection (266, 268, 270, 272) enables an axial relative movement between said element and the guide member (124).

23. The injection device according to one or more of the foregoing claims, wherein the plunger (108) has associated with it a latch (FIG. 29: K2), dependent on the position of the plunger (108), which releasably latches the latter in a predefined position relative to the setting member (151).

24. The injection device according to claim 23, wherein upon replacement of a cartridge (52), latching is accomplished by means of the position-dependent latch (FIG. 29: K2) in order to immobilize the plunger (108) in a predefined position after opening and before closing of the container (80).

25. The injection device according to one or more of the foregoing claims, wherein at least one working action necessary for replacement of a cartridge (52) is used to influence the position of the plunger (108) relative to the setting member (151).

26. The injection device according to one or more of the foregoing claims, comprising a cocking spring (172) which is cocked before an injection and which, after an injection is triggered, causes an insertion of the injection needle (76) and an expulsion of fluid (53) from the cartridge (52) through the injection needle (76).

27. The injection device according to claim 26, wherein the spring (172) is cocked from the proximal end of the injection device (30).

28. The injection device according to claim 27, wherein the barrel (50) comprises a thread (60) in its proximal region; and a cocking member (56) is provided which is equipped with a thread (58) complementary to said thread (60) and is configured to displace the container (80), configured for reception of a cartridge (52), in the barrel in the distal direction (315).

29. The injection device according to claim 28, wherein a latching member (64) is provided which, after a defined displacement in the distal direction (315), snaps into a latch opening (38),

and said defined displacement travel can be achieved only if an injection needle (76) is installed.

30. The injection device according to one or more of the foregoing claims, wherein the setting member (151) can be coupled via a travel-dependent coupling (K1) to a setting element (32) for manual setting of the injection dose.

31. The injection device according to claim 30, wherein the travel-dependent coupling (K1) is out of engagement during cartridge replacement (FIGS. 26 through 32).

32. The injection device according to one or more of the foregoing claims, wherein upon dose setting, an axial spacing (Y) in the region between the setting member (151) and the container (80) is increased.

33. The injection device according to claim 32, wherein during an injection, the axial spacing (Y) that was increased upon dose setting is decreased, in particular to zero.

34. The injection device according to claim 33, wherein upon the decrease in the axial spacing (Y), a frictionally engaging coupling (162, 250) provided between the container (80) and the plunger (108) is disengaged in order to make possible a relative movement between container (80) and plunger (108).

35. The injection device according to one or more of the foregoing claims, wherein the plunger (108) is equipped with a micro-tooth set (FIG. 8: 162), and in order to create a frictionally engaging coupling, a part (122) arranged displaceably relative to the plunger (108) comprises an engagement member (FIG. 14: 250) for disengageable engagement into said micro-tooth set (162).

36. An injection device comprising a barrel (50, 48, 46, 36),
comprising a plunger (108), arranged in said barrel and serving to expel
injection fluid out of a container (52) containing an injection fluid,
which plunger is guided in a guide member (124) axially displaceably but
nonrotatably relative to the guide member,
and which has an external thread (159) that is guided in an internal
thread (152) of a setting member (151),
comprising a cocking spring (172) which biases the setting member (151)
in the proximal direction,
comprising a latch (38, 64), provided between barrel and setting member
(151), for releasably latching the setting member (124) in a distal position
(FIG. 23) in which the cocking spring (172) is cocked,
the cocking spring (172), after disengagement of the latch (38, 64),
displacing the setting member (151) a defined distance (FIG. 25: L) out of
said distal position (FIG. 23) into a proximal end position (FIG. 25),
comprising external splines (222), provided on the setting member (151),
for longitudinal guidance of the setting member (151) in barrel-mounted
internal splines (134) substantially complementary to said splines (222),
and comprising external splines (274), provided on the guide member
(124), for longitudinal guidance of the guide member (124) in the barrel-
mounted internal splines (134).

37. The injection device according to claim 36, wherein the length of the
barrel-mounted internal splines (134) corresponds at least to the aforesaid
predefined distance (L).

38. The injection device according to claim 36 or 37, wherein in the
aforesaid distal position (FIG. 22), the external splines (222) of the setting
member (151) are not in engagement with the barrel-mounted internal splines
(134).

39. The injection device according to one or more of claims 36 through 38, wherein in the aforesaid distal position (FIG. 22), the external splines (274) of the guide member (124) are in engagement with the barrel-mounted internal splines (134).

40. The injection device according to one or more of claims 36 through 39, wherein in the aforesaid proximal end position (FIG. 25), the external splines (222) of the setting member (151) are in engagement with the barrel-mounted internal splines (134).

41. The injection device according to one or more of claims 36 through 40, wherein in the aforesaid proximal end position (FIG. 25), the external splines (274) of the guide member (124) are in engagement with only a part of their length with the barrel-mounted internal splines (134) (FIG. 25: K5).

42. The injection device according to one or more of claims 36 through 41, wherein a disengageable stop (104) is provided which, after it is disengaged, makes possible a displacement of the guide member (124) into a position (FIG. 27) in which its splines (274) are not in engagement with the barrel-mounted internal splines (134).

43. The injection device according to one or more of Claims 36 through 42, wherein the setting member (151) and the guide member (124) are connected rotatably with respect to one another, but axially substantially nondisplaceably relative to one another.

44. An injection device comprising a container (80) for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a barrel (50, 48, 46, 36) in which said container (80) is displaceable between a proximal end position and a distal position,

comprising a plunger (108), arranged in the barrel and serving to expel injection fluid (53) out of the cartridge (52), which plunger during an injection is guided in a guide member (124) axially displaceably but nonrotatably relative to the barrel, and which has an external thread (159) that is guided in an internal thread (152) of a setting member (151) serving to set the injection dose,

and comprising an apparatus for modifying an axial spacing (Y) in the region between the setting member (151) and the container (80) for purposes of dose setting.

45. The injection device according to claim 44, wherein during an injection, the axial spacing (Y) increased upon dose setting is reduced, and in

particular is reduced to zero.

46. An injection device comprising a container (80) for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a plunger (108), arranged in the barrel and serving to expel injection fluid (53) out of the cartridge (52), which plunger has an external thread (159) that is guided in an internal thread (152) of a setting member (151) serving to set the injection dose,

and which is guided axially displaceably in a guide member (124),

comprising a drive connection (232, 234, 266, 268, 270, 272) which is provided between the guide member (124) and the container (80) and which comprises an apparatus (118, 242; 232, 234) that limits, in at least one rotation direction, the torque transferable from the container (80) to the guide member (124).

47. The injection device according to claim 46, wherein the apparatus for limiting the torque comprises a slip coupling (232, 234).

48. The injection device according to claim 46 or 47, wherein the guide member (124) comprises a coupling (K5) for nonrotatable connection to the barrel, and said coupling (K5) can be disengaged so that a torque can be transferred from the container (80) to the guide member (124) and in order thereby to rotate the latter relative to the barrel.

49. The injection device according to one or more of the foregoing claims, wherein at least one spring member (228), which biases the cartridge (52) in the proximal direction, is provided in the container (80, 116).

50. The injection device according to claim 49, wherein the spring member (228) is configured integrally with a member (116) which can be connected to the container (80) in the manner of a cover.

51. An injection device comprising a barrel (36, 46, 48) wherein a dose-setting apparatus (FIG. 15), for setting a fluid quantity to be injected, is arranged displaceably between a distal end position (FIG. 3) and a proximal end position (FIG. 25),

said dose-setting apparatus having associated therewith a setting member (32) for dose setting,

and the dose-setting apparatus being, at least in its proximal end position (FIG. 25), out of engagement with said setting member (32).

52. An injection device, in particular according to claim 51, wherein a dose-setting apparatus (FIG. 15), for setting a fluid quantity to be injected, is arranged displaceably between a distal end position (FIG. 3) and a proximal end position (FIG. 25),

said dose-setting apparatus having associated with it a setting member (32) for dose setting,

and the dose-setting apparatus (FIG. 15) being, at least in its distal end position (FIG. 3), out of engagement with said setting member (32).

53. The injection device according to claim 51 or 52, wherein the setting member is configured as a rotary knob (32) that is biased resiliently by a torque (190) in the direction toward a zero dose setting, so that when the rotary knob (32) is out of engagement with the dose-setting apparatus (46), it rotates in response to the action of said torque (190) into an initial position, in particular its zero position.

54. The injection device according to one or more of claims 51 through 53, wherein the setting member (32) has splines (196), and the dose-setting apparatus (FIG. 15) is equipped with an engagement member (198) for said splines (196) which, in the proximal and/or distal end position of the dose-setting apparatus, is out of engagement with said splines (196).

55. An injection device, in particular according to one or more of the foregoing claims, which from its proximal end can be brought into a position from which an injection can be triggered.

56. The injection device according to claim 55, in whose barrel (36, 46, 48) a receptacle (80) for the reception of injection fluid (53) is arranged in longitudinally displaceable fashion,

and the displaceable dose-setting apparatus is displaceable, by means of a force acting on the receptacle (80), into a distal end position (FIG. 3).

57. The injection device according to claim 55 or 56, associated with which is a cocking member (FIG. 2: 56) which comprises a thread (58) for threaded joining to a thread (60) provided on the barrel in order, by the creation of said thread connection, to displace the dose-setting apparatus in the distal direction.

58. The injection device according to claim 57, wherein the contact between the cocking member (56) and the receptacle (80) is configured in such a way that the dose-setting apparatus is displaceable in the distal direction as far as a latching position (FIG. 2, FIG. 3) when a needle (76) is installed, but is not when a needle (76) is not installed.

59. The injection device according to claim 58, wherein a container (52) with injection fluid (53) is arranged in a receptacle (80) which comprises at its proximal end a segment (84) on which a carrier (92) of the injection needle (76) can be detachably mounted,

and said segment (84) comprises an opening (98) which, when an injection needle (76) is installed, is covered at least partially by the support (92) thereof,

and comprising a counter member (56A), provided on the cocking member, which is configured for axial engagement into said opening (98) when an injection needle (76) is not installed,

but is in contact against the carrier (92) of the injection needle (76) when the latter is installed.

60. The injection device according to claim 59, wherein the counter member (56A) provided on the cocking member (56) is configured in the manner of a

hollow cylindrical extension on the inner side of the cocking member (56).

61. The injection device according to one or more of Claims 51 through 60, wherein the dose-setting apparatus (FIG. 15) that is displaceable in the barrel (36, 46, 48) comprises a dose setting member (148, 150) which, in a distal end position region (FIG. 19, FIG. 22), is rotatable relative to the barrel so as to make possible a dose setting by means of that rotation.

62. The injection device according to claim 61, wherein the dose setting member (148, 150) has associated therewith a guide arrangement (134) which, in a position region adjacent to the distal end position region, guides it in the barrel axially and substantially nonrotatably (FIG. 13).

63. The injection device according to claim 61 or 62, wherein a thread (152) of the dose setting member (148, 150) are in engagement with a threaded rod (108), the latter being arranged nonrotatably and axially displaceably relative to the barrel, and being configured for the expulsion of injection fluid (53) during the injection operation.

64. The injection device according to one or more of claims 51 through 63, wherein the dose-setting apparatus (FIG. 15) has associated with it a cocking spring (172) which biases the dose-setting apparatus in the proximal direction, and a latch (38, 64) is provided in order to latch the dose-setting apparatus in the barrel after displacement in the distal direction, i.e. against the force of the cocking spring (172).

65. The injection device according to claim 64, wherein the dose-setting apparatus (FIG. 15) has a resilient latching member (64) associated with which, on the barrel (36), is an opening (38) into which said resilient latching member (64) can snap.

66. The injection device according to claim 65, wherein the opening (38) provided on the barrel is configured such that when the resilient latching member (64) is in its snapped-in state, it allows an axial displacement of the latter into a first distal position (FIG. 19) in which the dose-setting apparatus is out of engagement with the setting member (32).

67. The injection device according to claim 66, wherein the opening (38) provided on the barrel (36) is configured such that the resilient latching member (64), in its snapped-in state, is displaceable into a second distal position (FIG. 22), different from the first distal position (FIG. 19), in which the dose-setting apparatus is in engagement with the setting member (32) and can be actuated by the latter.

68. An injection device comprising an indicating apparatus for the injection dose that is set, in particular according to one or more of the foregoing claims,

comprising a scale (69') which comprises in a first row (71) a first series of indicating digits and in a second row (73) a second series of indicating digits,

and comprising a double magnifier (42), serving to indicate the dose, of which the one magnifier (70) is associated with the first row (71), and the other magnifier (72) with the second row (73), of indicating digits.

69. The injection device according to claim 68, wherein the first series comprises digits (e.g. even numbers) whose values lie between the values of the digits (e.g. odd numbers) of the second series.

70. The injection device according to claim 68 or 69, wherein the rows (71, 73) are configured such that upon setting of the dose, each indicated value in the one magnifier (70) is followed by an indicated value in the other magnifier (72).

MODIFIED CLAIMS

received at the International Office June 30, 2000; new claims 71-108 added;
all other claims unchanged (7 pages)

71. An injection device comprising a housing (50, 48, 46, 36) with a container (80), arranged in said housing, for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a plunger (108), arranged in the housing and serving to expel injection fluid out of the cartridge (52), which is guided in a guide member (124) axially displaceably but nonrotatably relative to the guide member, and which has an external thread (159) that is guided in an internal thread (152) of a setting member (151) provided for dose setting,

comprising a first coupling arrangement (K4) for nonrotatable but axially displaceable coupling of the setting member (151) to the housing, said coupling arrangement (K4) being deactivated during dose setting,

comprising a second coupling arrangement (K5) for nonrotatable but axially displaceable coupling of the guide member (124) to the housing,

and comprising an apparatus (50) for activating the first coupling arrangement (K4) and for disabling the second coupling arrangement (K5), in order to make the guide member (124) rotatable relative to the housing and the setting member (151) nonrotatable relative to the housing, and to make possible an axial movement of the plunger (108) by rotation of the guide member (124).

72. The injection device according to claim 71, wherein there is provided between guide member (124) and setting member (151) a connection (278, 282) that joins said two parts to one another rotatably but substantially axially nondisplaceably.

73. The injection device according to claim 71 or 72, wherein both the guide member (124) and the setting member (151) have external splines (274 and 222, respectively),

and said external spline sets have associated therewith internal splines (134) in the housing (36), into which said external spline sets (222, 274) can engage, individually or together, by means of a longitudinal displacement of guide member (124) and setting member (151) occurring relative to the housing (36).

74. The injection device according to claim 73, wherein the setting member (151) is equipped with a latching member (64), by means of which the setting member (151) can be releasably latched in a predefined axial position relative to the housing (36) in which its external splines (222) are not in engagement

with the internal splines (134) in the housing (36).

75. The injection device according to claim 74, wherein the setting member (151) is rotatable relative to the latching member (64) provided on it.

76. The injection device according to one of claims 73 through 75, wherein a latching member (64) is provided by means of which the guide member (124) can be releasably latched in a predefined axial position relative to the housing (36) and in which its external splines (274) are in engagement with the internal splines (134) in the housing (36).

77. The injection device according to one of claims 70 through 76, wherein the setting member (151) is biased by a spring (172) in the proximal direction.

78. The injection device according to claim 71, wherein there is provided, between the container (80) for the cartridge (52) and the guide member (124), a drive connection (266, 268, 270, 272) which makes possible the transfer of a torque from the container (80) to the guide member (124).

79. The injection device according to claim 78, wherein the drive connection (266, 268, 270, 272) comprises at least one apparatus (118, 242; 232, 234) that limits, in at least one rotation direction, the torque transferable from the container (80) to the guide member (124).

80. The injection device according to claim 79, wherein the apparatus for limiting the torque comprises a slip coupling (232, 234).

81. The injection device according to claim 80, wherein the slip coupling (232, 234) is effective for the rotation direction (FIG. 32: 321) in which a disengageable connection (115, 118) closing the container (80) is being closed.

82. The injection device according to one of claims 70 through 81, wherein a lock (111, 112) is provided for locking rotation of the container (80) relative to the housing receiving it, said lock being disengaged upon replacement of a cartridge (52).

83. The injection device according to claim 82, wherein the outer side of the container (80) is axially guided (FIG. 5: 112) in the inner side of a housing part (48), and this axial guidance (111, 112) is deactivated when the housing is opened in order to replace a cartridge (52).

84. The injection device according to one of claims 70 through 83, wherein the container (80) can be closed and opened by means of a disengageable connection (115, 118) so that a cartridge (52) can be introduced or removed.

85. The injection device according to claim 84, wherein the disengageable connection (115, 118) comprises an apparatus (118, 242) for generating an elevated breakaway torque in order temporarily to necessitate an elevated torque for disengaging it.

86. The injection device according to claim 84 or 85, wherein the disengageable connection (115, 118) comprises an element (116) that is connected via a drive connection (266, 268, 270, 272) to the guide member (124), said drive connection making possible an axial relative movement between said element (116) and the guide member (124).

87. The injection device according to claim 86, wherein during dose setting, the axial spacing (FIG. 23: Y) between the guide member (124) and said element (116) is modified.

88. The injection device according to one of claims 70 through 87, wherein the plunger (108) has associated with it a latching apparatus (FIG. 29: K2) in order to latch the latter disengageably in a defined position (FIG. 29) relative to the setting member (151).

89. The injection device according to claim 88, wherein upon replacement of a cartridge (52), latching is activated by means of the position-dependent latching apparatus (FIG. 29: K2) in order to immobilize the plunger (108) in the defined position (FIG. 29) after opening and before closing of the container (80).

90. The injection device according to one of claims 70 through 89, wherein at least one working action necessary for replacement of a cartridge (52) is used to influence the position of the plunger (108) relative to the setting member (151).

91. The injection device according to one of claims 70 through 90, comprising a spring (172) which is cocked before an injection and which, after an injection is triggered, causes an insertion of the injection needle (76) and an expulsion of fluid (53) from the cartridge (52) through the injection needle (76).

92. The injection device according to claim 91, wherein the spring (172) is cocked from the proximal end of the injection device (30).

93. The injection device according to claim 92, wherein the housing (50) comprises a thread (60) in its proximal region; and a cocking member (56) is provided which is equipped with a thread (58) complementary to said thread (60) and is configured to displace the container (80), configured for reception of a cartridge (52), in the housing in the distal direction (315).

94. The injection device according to claim 93, wherein a latching member (64) is provided which, after a defined displacement travel in the distal direction (315), snaps into a latch opening (38),
and said defined displacement travel can be achieved only if an injection needle (76) is installed.

95. The injection device according to one of claims 70 through 94, wherein the setting member (151) can be coupled via a travel-dependent coupling (K1) to a setting element (32) for setting the injection dose.

96. The injection device according to claim 95, wherein the travel-dependent coupling (K1) is out of engagement during cartridge replacement (FIGS. 26 through 32).

97. The injection device according to one of claims 70 through 96, comprising a latching apparatus (38, 64), provided between housing and setting member (151), for releasably latching the guide member (124) and/or the setting member (124) in a distal position (FIG. 23) in which the cocking spring (172) is cocked, the cocking spring (172), after disengagement of the latching apparatus (38, 64), displacing the setting member (151) a defined distance (FIG. 25: L) out of said distal position (FIG. 23) into a proximal end position (FIG. 25), comprising external splines (222), provided on the setting member (151), for longitudinal guidance of the setting member (151) in housing-mounted internal splines (134) substantially complementary to said splines (222), and comprising external splines (274), provided on the guide member (124), for longitudinal guidance of the guide member (124) in said housing-mounted internal splines (134).
98. The injection device according to claim 97, wherein the length of the internal splines (134) corresponds at least to the aforesaid defined distance (L).
99. The injection device according to claim 97 or 98, wherein in the aforesaid distal position (FIG. 22), the external splines (222) of the setting member (151) are not in engagement with the housing-mounted internal splines (134).
100. The injection device according to one of claims 97 through 99, wherein in the aforesaid distal position (FIG. 22), the external splines (274) of the guide member (124) are in engagement with the housing-mounted internal splines (134).
101. The injection device according to one of claims 97 through 100, wherein in the aforesaid proximal end position (FIG. 25), the external splines (222) of the setting member (151) are in engagement with the housing-mounted internal splines (134).
102. The injection device according to one of claims 97 through 101, wherein in the aforesaid proximal end position (FIG. 25), the external splines (274) of the guide member (124) are in engagement with only a part of their length with the housing-mounted internal splines (134) (FIG. 25: K5).
103. The injection device according to one of claims 97 through 102, wherein a disengageable abutment (104) is provided which, after it is disengaged, makes possible a displacement of the guide member (124) into a position (FIG. 27) in which its splines (274) are not in engagement with the housing-mounted

internal splines (134), in order to make possible, by rotation of the guide member (124), a movement of the plunger (108) relative to the housing.

104. The injection device according to one of claims 97 through 103, wherein the setting member (151) and the guide member (124) are joined rotatably with respect to one another, but axially substantially nondisplaceably relative to one another.

105. An injection device comprising a container (80) for reception of a cartridge (52) which contains an injection fluid (53) and on whose proximal end an injection needle (76) can be mounted,

comprising a housing (50, 48, 46, 36) in which said container (80) is displaceable between a proximal and a distal position,

comprising a plunger (108), arranged in the housing and serving to expel injection fluid (53) out of the cartridge (52), which has an external thread (159) that is guided in an internal thread (152) of a setting member (151) serving to set the injection dose,

and which is guided axially displaceably in a guide member (124),

and comprising a drive connection (232, 234, 266, 268, 270, 272)

- which is provided between the guide member (124) and the container (80)

- and which comprises an apparatus (118, 242; 232, 234) that limits, in at least one rotation direction, a torque transferable from the container (80) to the guide member (124),

in order to make possible, by the transfer of a limited torque from the container (80) to the guide member (124) after a cartridge replacement, a displacement of the plunger (108) in the proximal direction into contact against a piston (106) provided in the cartridge (52).

106. The injection device according to claim 105, wherein the apparatus for limiting the torque comprises a slip coupling (232, 234).

107. The injection device according to one of claims 70 through 106, wherein at least one spring member (228), which biases the cartridge (52) in the proximal direction, is provided in the container (80, 116).

108. The injection device according to claim 107, wherein the spring member (228) is configured integrally with a member (116) which can be joined in the manner of a cover to the container (80).

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